WHAT IS CLAIMED IS:

1. A program product operable on a computer, the program product comprising:

    a computer-usable medium; wherein the computer usable medium comprises instructions comprising steps of:

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        displaying a Chinese Zhu-Yin phonetic soft keyboard and a phrase candidate window on the screen, with the Zhu-Yin phonetic soft keyboard consisting of a section for consonants in C-set, a section for transition vowels in H-set, a section for vowels in V-set, a section for tones in T-set, and a set of function keys;

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        translating the input device event signal sequence of "press", "touch" and "release" corresponding to keys in the C-set, the H-set, the V-set, and the T-set into a sequence of partial Zhu-Yin spellings according to an *automatic partial Zhu-Yin spelling separation protocol*;

        extracting from a phrase database a set of phrases that match the generated

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        sequence of partial spellings;

        displaying the extracted matching phrases onto buttons in the phrase candidate window; and

        responding to the release or click event signals on a phrase button by exporting the phrase of the selected button to a receptive background

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        application program.

2. The program product of Claim 1, wherein said *automatic partial Zhu-Yin spelling separation protocol* is defined by a five state {0, 1, 2, 3, 4} nondeterministic automaton P, with the initial state 0, and with the state transition and input/output relation being defined by sextuples (current state,

23

current partial string, input event, output symbol string, next state, next state

partial string) as follows:

(0, "", press the key of consonant "c", " ~ c", 1, "c");

(0, "", press the key of transition vowel "h", "~ h", 2, "h");

(0, "", press the key of vowel "v", "~ v", 4, "v");

(0, "", press the key of tone "t", "~ t", 0, "");

(1, current string "X", touch the key of transition vowel "h", "h", 2, "Xh");

(1, current string "Xc" with "c" being a consonant, release the key of "c",

"", 3, "Xc");

(1, current string "X", release the key of vowel "v", "v", 3, "Xv");

(2, current string "Xh" with h being a transition vowel, release the key of

"h", "", 3, "Xh");

(2, current string "X", release the key of vowel "v", "v", 3, "Xv");

(3, current string "X", empty input, "", 0, "");

(3, current string "X", touch the key of tone "t", "t", 0, "");

(4, current string "Xv" with "v" being a vowel, release the key of "v", "",

0, ""),

where symbol "~" represents the separation mark between partial spellings,

"" represents an empty string, and "X" represents a phonetic symbol string.

3. The program product of Claim 1, wherein said Chinese Zhu-Yin phonetic soft

keyboard consists of the following key sections:

22 C-set keys of the 21 consonants "ㄅ" to "ㄙ" plus a blank consonant;

4 H-set keys of the 3 transition vowel { ㄧ,ㄨ,ㄩ } plus a blank transition

vowel;

14 V-set keys of the vowels "丫" to "ㄦ" plus a blank vowel;

five T-set keys of the tonal symbols { ˙,--,ˊ,ˇ,ˋ }; and

function keys including a key to change the phonetic mode of the system, a

key to erase the phonetic symbol string of the current word, a key to

5   change the phrase window to the previous page, and a key to change the

phrase window to the next page.

4. The Chinese Zhu-Yin phonetic soft keyboard of Claim 3 , wherein said

phonetic symbol keys and tonal keys are grouped into C (consonant), H

(transition vowel), V (vowel), and T (tone) sections and placed consecutively

10   from top to bottom on the keyboard, said keys are further grouped and

arranged as follows:

a. the 22 C-set keys are gathered into six groups as { ㄅㄆㄇㄈ, ㄉㄊㄋㄌ,

ㄍㄎㄏ,ㄐㄑㄒ,ㄓㄔㄕㄖ,ㄗㄘㄙ blank}, with the six groups arranged

from top to bottom and from left to right in the C section area;

15   b. the 4 H-set keys { ㄧㄨㄩ blank} are arranged in an array and placed

between the C section and the V section (immediately below the C

section, and right above the V section), with the dimension of the H

array arranged to be perpendicular to the direction from the C section

to the H section;

c. the 14 V-set keys are gathered into three groups as { 丫 ㄛ ㄜ ㄝ,ㄞ ㄟ ㄠ

ㄡ,ㄢ ㄣ ㄤ ㄥ ㄦ blank}, with the three groups arranged from left to

right in the V section area;

d. the five T-set keys { ˊ,--,ˊ,ˇ,ˋ } are arranged in an array and placed into a

T section area below the V section, with the dimension of the T array

arranged to be perpendicular to the direction from the V section to the

T section;

e. the keys within each group of the C, H, V, and T sections are arranged

in the standard Zhu-Yin symbol order inside the group.

f. spaces are reserved to separate neighboring groups.

5. A program product operable on a computer, the program product comprising:

a computer-usable medium; wherein the computer usable medium comprises

instructions comprising steps of:

displaying an initial Chinese Pin-Yin soft keyboard and a phrase

candidate window on the screen, with the initial Chinese Pin-Yin soft

keyboard consisting of a section of alphabet symbols "A" to "Z" in I-set,

a section for tones in T-set, a set of function keys;

displaying an N-set panel of keys of the next substring of alphabet

symbols in N-set, in response to the selection of an initial alphabet

symbol from the I-set;

displaying an R-set panel of keys of the remaining substring of alphabet

symbols in R-set, in response to the selection of an initial alphabet

symbol from the I-set and the selection of a next substring of alphabet

symbols from the N-set ;

translating the input device event signals sequence of "press", "touch"

and "release" on keys of the I-set, the N-set, the R-set, and the T-set into

5   a sequence of partial Pin-Yin spellings according to an *automatic partial*

Pin-Yin spelling separation protocol;

extracting from a phrase database a set of phrases that match the

generated sequence of partial Pin-Yin spellings;

displaying the extracted matching phrases onto buttons in the phrase

10 candidate window; and

responding to the release or click event signals on a phrase button by

exporting the phrase of the selected button to a receptive background

application program.

6. The program product of Claim 1, wherein said *automatic partial Pin-Yin*

15 *spelling separation protocol* is defined by a four state {0, 1, 2, 3}

nondeterministic automaton P, with the initial state 0, and with the state

transition and input/output relation being defined by sextuples (current state,

current partial symbol string, input event, output symbol string, next state,

next state partial symbol string) as follows:

20 (0, "", press a key of an initial alphabet "x", " ~ x", 1, "x");

(1, alphabet "x", touch the key of an alphabet "y" with "xy" being a leading

string in a Pin-Yin spelling, "y", 2, "xy");

(1, alphabet "x", touch the key of a length-two string "Hy" with "xHy" being a

leading string in a Pin-Yin spelling, "Hy", 2, "xHy");

25 (1, alphabet "x", release the key of symbol "x", "", 3, "x");

27

(2, current string "Xy", release the key of the symbol "y", "", 3, "Xy");

(2, current string "X", release the key of a length-two string "Hy" , "", 3, "XHy");

(2, current string "X", release a key of a string "R" with "XR" being a Pin-Yin spelling, "R", 3, "XR");

(3, current string "X", empty input, "", 0, "");

(3, current string "X", touch the key of a tone "t", "t", 0, "");

where symbol "~" represents the separation mark between partial spellings, "" represents an empty string, "H" is the alphabet symbol H, "x" and "y" are dummy alphabet symbols, and "X" and "R" represent alphabet symbol strings.

7. The method of claim 5, wherein said initial Chinese Pin-Yin soft keyboard consists of:

an I-set panel containing 26 alphabet keys from "A" to "Z";

a T-set panel containing the five tonal keys { ˙,--,ˊ,ˇ,ˋ }; and

function keys including a key to change the phonetic mode of the system, a key to erase the symbol string of the current partial syllable, a key to change the phrase window to the previous page, and a key to change the phrase window to the next page.

8. the initial Chinese Pin-Yin soft keyboard of Claim 7, wherein said I-set alphabet keys are gathered into eight groups as [ABCD, EFG, HIJ, KLMN, OPQ, RST, UVW, XYZ], arranged in the alphabetical order, and placed from left to right, top to bottom into the I-set panel with spaces reserved between neighboring groups.

9. the initial Chinese Pin-Yin soft keyboard of Claim 7, wherein the five tonal T-set keys { ΄,--,΄,˘,` } are arranged in an array and placed below the said I-set panel.

10. The program product of Claim 5, wherein said next substring of alphabet symbols in N-set are alphabet symbols that are none-H second symbols in a Pin-Yin spellings, or, are the strings of the second and the third symbols in a Pin-Yin spelling with the second symbol being the "H" symbol.

11. The program product of Claim 5, wherein said N-set of keys that do not begin with symbol "H" are arranged into a one array panel and shown above the I-set panel; while those with associated next substrings beginning with symbol "H" are arranged in a second panel and shown below the I-set panel.

12. The program product of Claim 5, wherein said remaining substring of alphabet symbols in R-set are the remaining symbol string of an initial symbol in the I-set and a next symbol substring in the N-set in a Pin-Yin spelling.

13. The program product of Claim 5, wherein said R-set panel of keys are arranged in a panel and put on top of the I-set panel.